

Title (en)

Turbine component other than airfoil having ceramic corrosion resistant coating and methods for making same

Title (de)

Turbinnenkomponente ausser Turbinnenschaufel mit einer korrosionsbeständigen Keramikschicht und Verfahren zu deren Herstellung

Title (fr)

Composant de turbine autre qu'une aube avec un revêtement céramique résistant à la corrosion et son procédé de fabrication

Publication

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Application

EP 06251560 A 20060323

Priority

US 9435105 A 20050331

Abstract (en)

An article comprising a turbine component other than an airfoil having a metal substrate (60) and a ceramic corrosion resistant coating (64) overlaying the metal substrate (60). This coating (64) has a thickness up to 127 microns and comprises a ceramic metal oxide selected from the group consisting of zirconia, hafnia and mixtures thereof. This coating (64) can be formed by a method comprising the following steps: (a) providing a turbine component other than an airfoil comprising the metal substrate (60); (b) providing a gel-forming solution comprising a ceramic metal oxide precursor; (c) heating the gel-forming solution to a first preselected temperature for a first preselected time to form a gel; (d) depositing the gel on the metal substrate (60); and (e) firing the gel at a second preselected temperature above the first preselected temperature to form the ceramic corrosion resistant coating (64) comprising the ceramic metal oxide. This coating (64) can also be formed by alternative methods wherein a ceramic composition comprising the ceramic metal oxide is deposited by physical vapor deposition on the metal substrate (60) to provide a strain-tolerant columnar structure, or is thermal sprayed on the metal substrate (60).

IPC 8 full level

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Citation (search report)

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